

# Building DIY Microscopes: A Simple and Enriching Neuroscience Activity for Teaching and Outreach

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## BACKGROUND

- Our most successful and long-lasting outreach activities thrive via partnerships with local museums, non-profits and school districts
- We co-host and lead dozens of neuroscience outreach activities each year
- The majority of our activities reach audiences of K-8<sup>th</sup> grade students and families

**GOAL – to extend our neuroscience outreach programming to older populations of students – 9-12<sup>th</sup> grade**

## NEW EVENT

- New partnership with the Inaugural Psychology & Neuroscience Summer Springboard Program (San Diego, CA) hosted at Duke

**GOAL – to showcase a “day in the life of a neuroscientist” and to lead a simple hands-on lab task for the summer students in the program**

## LAB ACTIVITY

### 1 Learn how to slice a mouse brain

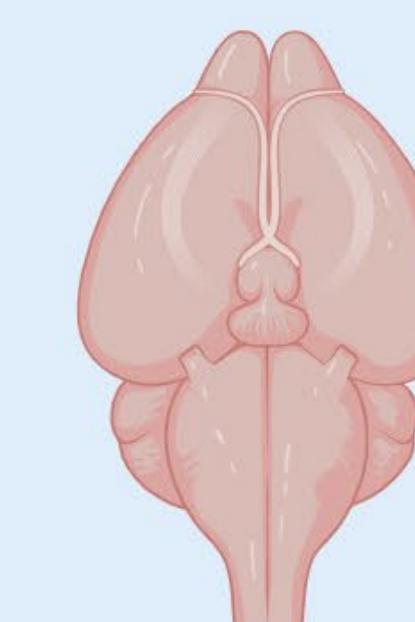


Vibratome

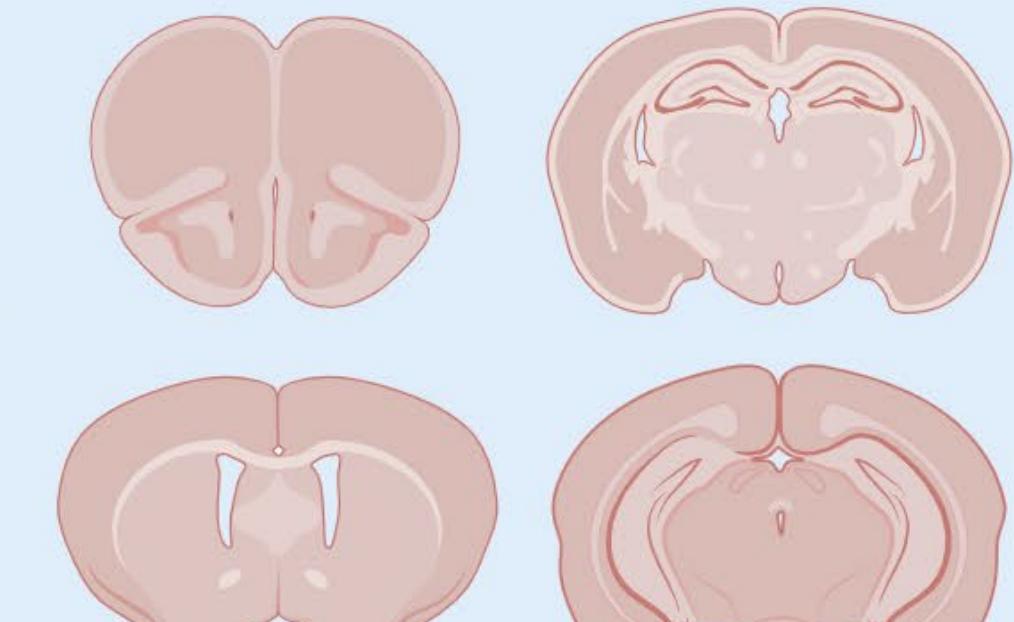


Cryostat

### 2 Take 4 coronal brain sections



Whole brain

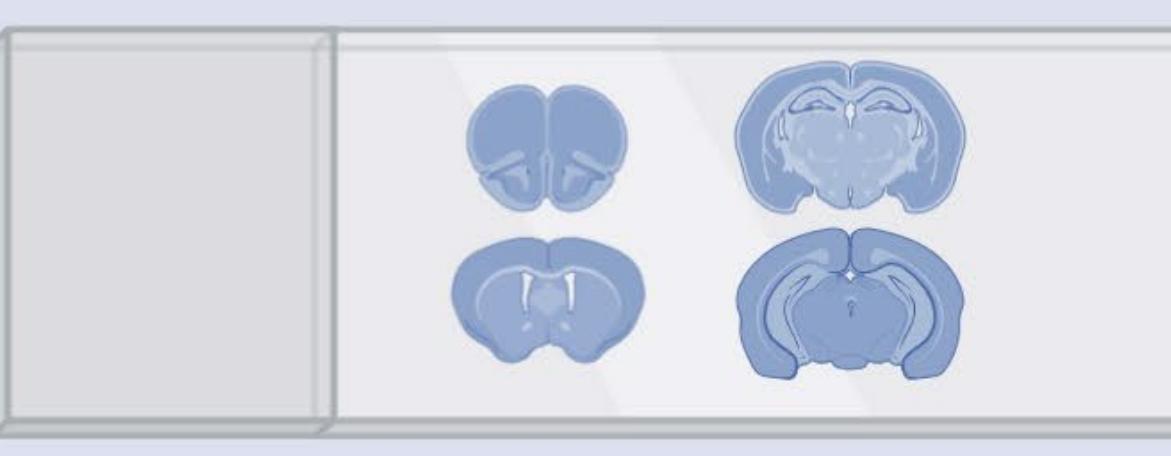


Coronal Sections

### 3 Stain & mount brain tissue

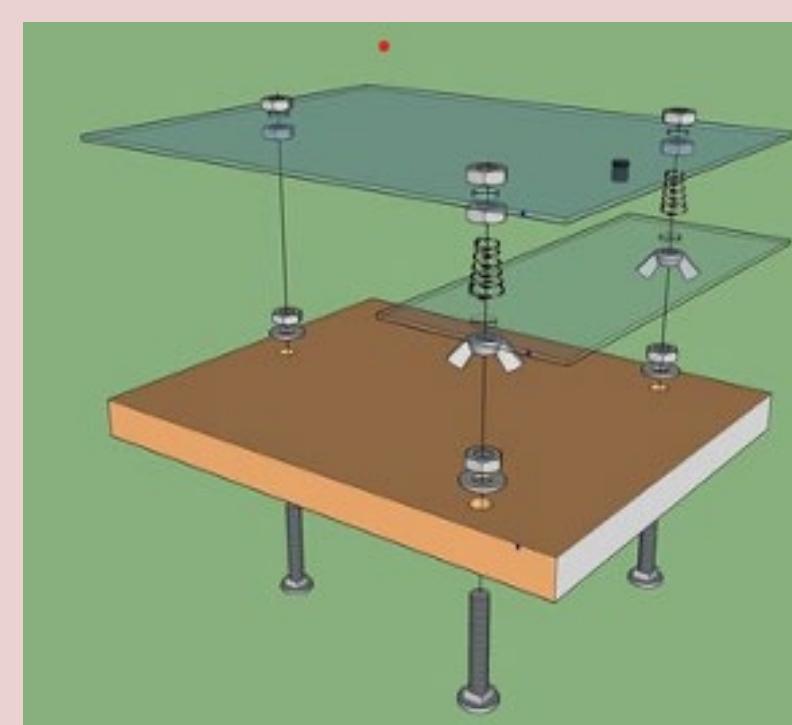
1	2	3	4
A	Tissue slices in basket		
B	Toluidine Blue	Water	Water
C	Water	Water	Water

Stain

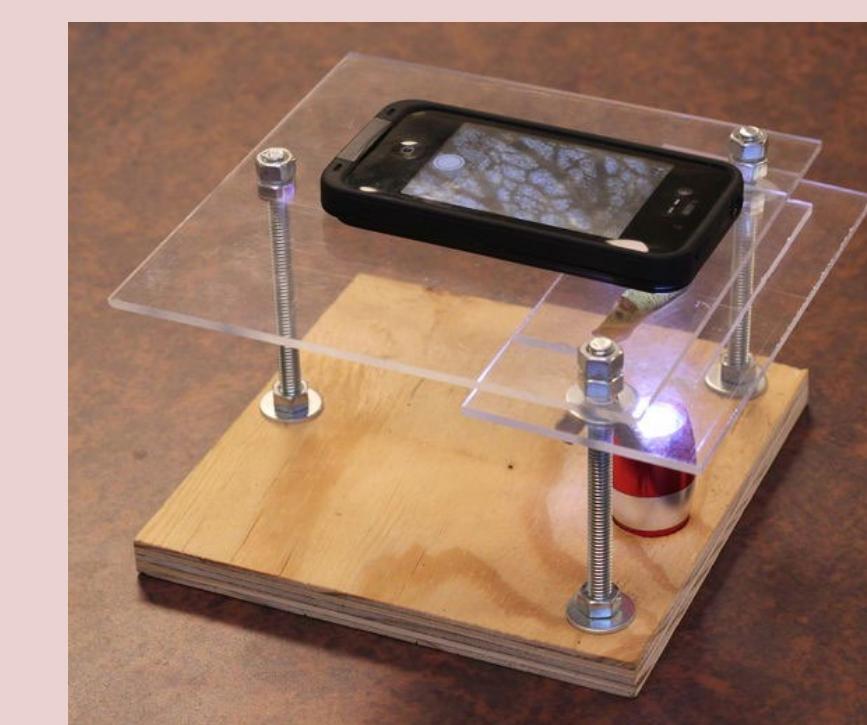


Mount

### 4 Build a DIY Microscope



Assemble



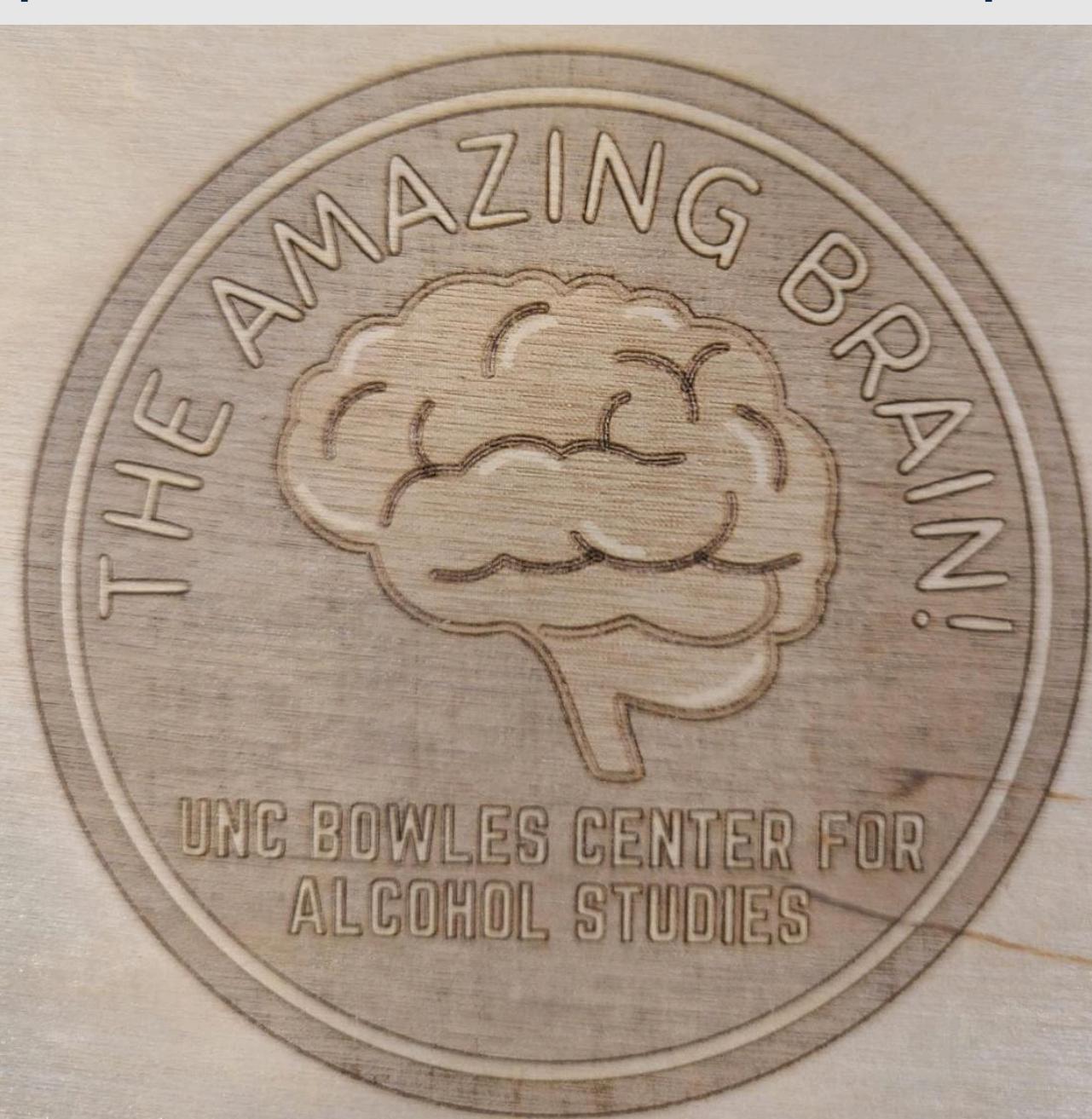
View Slides

## EVENT PHOTOS



## CONCLUSIONS

- Students were motivated and enthusiastic for all activities!
- We had a great Q & A throughout the event with scientists at all levels of training
- They got to keep their microscope and slides as a souvenir!
- We ran out of time and were a bit rushed – next year we will build in more time for questions and for taking photos with the microscopes



## BCAS OUTREACH

For more information about any of our activities and strategies, please e-mail

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Please visit our BCAS Outreach Website for more information about our scientific activities and community outreach



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DIY Microscope Info - <https://goldsteinlab.weebly.com/organizeaworkshop.html>

Summer Springboard, San Diego- <https://summerspringboard.com/teen-programs/psychology-neuroscience-at-duke/>

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